

What is claimed is:

1. A mobile robot using an image sensor, comprising:
an image capture unit for photographing the bottom surface according to
5 motion of a mobile robot at a certain intervals and capturing images;
a displacement measurer for measuring displacement about the captured
image; and
a microcomputer for outputting an actual moving distance by direction and
motion of the mobile robot on the basis of the measured displacement value.

10

2. The mobile robot of claim 1, further comprising:
a memory for storing images outputted from the image capture unit; and
a comparator for comparing an image presently outputted from the image
capture unit with a previous image stored in the memory.

15

3. The mobile robot of claim 2, wherein the displacement measurer
measures a moving path of pixels of an image of each frame outputted from the
comparator.

20 4. The mobile robot of claim 1, wherein the image capture unit
captures an image of the bottom surface having 18*18 pixel and 64-degrees
brightness by 1500 frames per second.

5. The mobile robot of claim 1, wherein the image capture unit
25 includes:

a luminous diode for irradiating light;
a light guide for guiding the irradiated light; and
an image sensor for capturing an image about the bottom surface by
sensing intensity variation of light reflected onto the bottom surface through a light
5 lens according to motion of the mobile robot.

6. A method for measuring a moving distance of a mobile robot by
using an image sensor, comprising:

photographing the bottom surface according to motion of a mobile robot at
10 a certain intervals and capturing an image;
measuring displacement between the captured images; and
outputting an actual moving distance by calculating direction and motion of
the mobile robot on the basis of the measured displacement value.

15 7. The method of claim 6, further comprising:
storing the captured image.

8. The method of claim 6, wherein the image is divided into a certain
pixels in the image capturing step, each pixel receives light reflected onto the
20 bottom surface according to a material of the bottom surface and is discriminated
by black and white brightness.

9. The method of claim 8, wherein the image is captured by 1500
frames per second so as to have 18*18 pixels and 64-degrees brightness.

25

10. The method of claim 9, wherein the actual moving distance is calculated by dividing a pixel moving distance by a certain time, more preferable, 1/1500sec.

5 11. The method of claim 8, wherein a moving distance is measured according to direction of the pixel and magnitude of movement in the image in the displacement measuring step.

10 12. The method of claim 6, wherein it is judged the mobile robot is not moved, when each captured image is the same in comparison, it is judged the mobile robot is moved, when each captured image is not the same in comparison in the displacement measuring step.